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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

SUGIYAMA, M. et al.

Atty. Ref.: 427-83; Confirmation No. 5550

Appl. No. 10/659,358

TC/A.U. 1746

Filed: September 11, 2003

Examiner: Wills

For: SEPARATOR FOR LITHIUM ION SECONDARY BATTERY AND LITHIUM ION
SECONDARY BATTERY AND LITHIUM ION SECONDARY BATTERY PROVIDED
THEREWITH

* * * * *

May 2, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE AND PRESENTATION OF COMPARATIVE EVIDENCE

This paper responds to issues raised in the Official Action of September 12, 2005 (Final Rejection) as well as examiner comments in an Advisory Action mailed January 5, 2006. A Request for Continued Examination was submitted on February 7, 2006 and with it action suspended for a period of three months (for which the relevant fee was paid). For completion of the record please note that applicants have requested the Office to withdraw an Official Action mailed March 14, 2006 during the three month period for suspension of action. The suspension of action request expires May 7, 2006, hence this submission, including the attached evidence, is timely submitted. This submission is not intended to be a response to the Official Action of March 14, 2006 and should not be so docketed.

It would appear from the Official Action of March 14, 2006 (for which withdrawal is requested) the Amendment filed November 30, 2005 has been entered although this was not requested in the Request for Continued Examination. Applicants are prepared to proceed on the basis of the amendments submitted November 30, 2005.

Attached is the Evidentiary Declaration of Mr. Sugiyama, the senior inventor in respect of the subject application, made April 5, 2006. The declaration follows the format of Examples 1-14 and Comparative Examples 1-10 of the specification of the subject application and extends them to include additional examples and additional comparative examples. These data are presented, together with the data contained in the as-filed specification, in response to statements made in previous Official Actions (excluding the Official Action of March 14, 2006).

The examiner states "Oka teaches that it is conventional to employ larger pores in the interior of polymer in membranes, in order to provoke increased oxygen permeability" in the Advisory Action dated January 5, 2006. Applicants disagree with this conclusion.

As defined by applicants' claims, the separators of the present invention have specific ranges in which the external surface has an average pore size of 0.1 to 5 μm and the interior has an average pore size of 0.5 to 10 μm in the porous layer, neither of which are disclosed or suggested in Oka or Pekala.

The separators of the present invention can obtain not only sufficient air permeability but also ionic conductivity, volume retention ratio, and adhesion as shown in the attached Sugiyama Declaration by controlling the pore size of the external surface and the interior in the porous layer.

Also, it is clear that the effects of the present invention cannot be obtained by a separator simply having large pores in the interior – this will be apparent from the comparison between Example 10-1 and Comparative Example 6-1 and between Example 15 and Comparative Example 11 in the Declaration, in which the separator of Comparative Example 6-1 has a problem in view of the evaluation of a test cell because the porous layer in the separator has large pores outside applicants' claimed range.

Therefore, the specific ranges of an average pore size of the external surface and the interior in the porous layer and the effects thereof cannot be anticipated by or suggested from Pekala et al or Oka et al.

According, even if Pekala and Oka are combined, the specific ranges in present claim 1 which was filed on November 30, 2005, are neither described nor suggested and the effects of the present invention are not obtained, and thus the present claims are not obvious.

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Claim 1 should be allowed and claims 2 to 4, 7 to 9, and 12 to 15 should also be allowed since they depend on claim 1, should also be allowed.

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____



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